

LIS008266551B2

(12) United States Patent

Boldyrev et al.

(54) METHOD AND APPARATUS FOR BINDING USER INTERFACE ELEMENTS AND GRANULAR REFLECTIVE PROCESSING

(75) Inventors: Sergey Boldyrev, Söderkulla (FI);
Jukka Honkola, Espoo (FI); Mika
Juhani Mannermaa, Burlington, MA
(US); Hannu Laine, Espoo (FI); Ian

Justin Oliver, Söderkulla (FI); Vesa-Veikko Luukkala, Espoo (FI); Sampo Juhani Sovio, Riihimäki (FI)

(73) Assignee: Nokia Corporation, Espoo (FI)

(*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35 U.S.C. 154(b) by 181 days.

(21) Appl. No.: 12/813,248

(22) Filed: Jun. 10, 2010

(65) Prior Publication Data

US 2011/0307841 A1 Dec. 15, 2011

(51) **Int. Cl. G06F 3/033** (2006.01) **G06F 3/00** (2006.01)

- (52) U.S. Cl. 715/863; 715/701; 715/702; 715/864

(56) References Cited

U.S. PATENT DOCUMENTS

| 5,127,098 A * 6/1992 6,545,669 B1 * 4/2003 6,906,646 B1 * 6/2005 7,363,342 B1 * 4/2008 7,371,177 B2 * 5/2008 7,475,397 B1 * 1/2009 | Van Loo et al. 718/104 Rosenthal et al. 711/202 Kinawi et al. 345/173 Mills et al. 341/101 Wang et al. 709/204 Ellis et al. 463/42 Garthwaite et al. 718/101 Joseph 709/223 |
|---|---|
|---|---|

(10) Patent No.: US 8,266,551 B2 (45) Date of Patent: Sep. 11, 2012

| | 7,532,196 7,533,189 7,536,034 7,636,794 | B2 * B2 * B2 * | 5/2009 5/2009 12/2009 | Hinckley Mahajan et al. Rhoads et al. Ramos et al. | 709/248 382/107 709/248 |
|-------------|--|----------------------|-----------------------------|--|-------------------------------|
| | 7,703,073 | B2* | 4/2010 | Illowsky et al | 717/121 |
| (Continued) | | | | | |

FOREIGN PATENT DOCUMENTS

GB 2 358 778 A 8/2001 (Continued)

OTHER PUBLICATIONS

U.S. Appl. No. 12/484,801, filed Jun. 15, 2009, Boldyrev et al.

(Continued)

Primary Examiner — Steven B Theriault (74) Attorney, Agent, or Firm — Ditthavong Mori & Steiner, P.C.

(57) ABSTRACT

An approach is provided for binding user interface elements and granular reflective processing. An information management infrastructure determines to detect an event, from a first device, for specifying one or more user interface elements for transfer to a second device. The information management infrastructure further identifies one or more processes bound to the user interface elements. The information management infrastructure also determines at least one of a user context, an execution context within the user context, and one or more other execution contexts for the processes, wherein the one or more other execution contexts are from at least one of the user context and one or more other user contexts. The information management infrastructure further causes, at least in part, serialization of at least one of the user context, the execution context, and the one or more other execution contexts. The information management infrastructure further determines to transmit the serialization to the second device to initiate reconstruction of the at least one of the user context, the execution context, and the one or more other execution contexts.

20 Claims, 12 Drawing Sheets

